

10/521840

1/10/05
JT12 Rec'd PCT/PTO 20 JAN 2005

EXPRESS MAIL LABEL NO. EV 352483678 US

PATENT APPLICATION
DOCKET NO. 24245.PCT.US

UNITED STATES PATENT APPLICATION

of

Ruisheng Liang

For

**GOGGLES FOR SWIMMING, DIVING OR SURFING
AND A MANUFACTURING METHOD THEREOF**

TO THE COMMISSIONER OF PATENTS AND TRADEMARKS:

Your petitioner, **Ruisheng Liang**, a citizen of the Republic of China, whose residence and postal mailing address is 16, Hao Ke Zhou East Street, Shi Xi Cun, Gong Ye Da Dao Zhong, Guangzhou City, Guang Dong Province, P.R. China 510280, prays that letters patent may be granted to him as the inventor of GOGGLES FOR SWIMMING, DIVING OR SURFING AND A MANUFACTURING METHOD THEREOF, as set forth in the following application.

GOGGLES FOR SWIMMING, DIVING OR SURFING AND A MANUFACTURING METHOD THEREOF

Technological field of the invention

The invention relates to a kind of sport article, particularly, a kind of
5 goggles for swimming, diving or surfing and its manufacturing method
thereof.

Existing technology prior to the invention

The existing goggles for diving or surfing or swimming are customarily
comprised of four parts, namely, external frame, soft veil, lenses, and
10 compression framework. The soft veil is mostly made of PVC, TPR or silica
gel, while the glass is mostly made of PC or toughened glass. The various
complicated parts must be assembled with mature craftsmanship, and the
finished products are not 100% waterproof or gas-proof. Before shipped
out of the plant, the products need long time pressure test.

Purpose of the invention

The purpose of the invention is to overcome the above-mentioned
disadvantages of the existing products and provide a kind of once moulded
product, which can be one hundred percent waterproof and gas proof,
which manufacturing process thereof can be simplified. Another purpose
20 of the invention is to provide the manufacturing process thereof.

Technological scheme of the invention

The invention achieves its purpose in the following ways. The goggles
comprise of two frames, two lenses and strap. The lenses and the frames
are moulded integrally by a high rigid PC and a silica gel material.

The manufacturing method includes the following steps: To put the PC lenses inside the soft veil-shaped cavity; To inject a soft veil silica gel material (a kind of high rigid joint molding material) into the cavity, when the injecting temperature is controlled between 200~250 °C and the
5 injecting pressure is controlled at 40~50T/cm².

Advantages of the invention:

(1) Fastness: the principal part of the glass is molded at one time through injecting, heating, pressing and opening, so the glass and the soft veil are very firmly united, and they will never fall apart
10 when you use it or impact it.

(2) Tightness: since the glass and the silica gel are united at one time through injection, the product is totally waterproof and gas proof when swimming, diving and surfing.

(3) Simpleness: the principal part of the glass is once moulded
15 integrally, which manufacturing processes are reduced and the long time air and water leak test is eliminated.

Figure description

The basic operating mode of the invention will be further described with respect to the attached figure.

20 Figure 1 is the schematic drawing of the structure of the invention.

Embodied example

As Figure 1 shows, the product is composed of Frame 1, lenses 2, Adjustment Button 3 and strap 4. The principal part of the invention is

comprised of Frame 1 and lenses 2. Lenses 2 and Frame 1 are molded integrally with high rigid PC and silica gel.

The manufacturing process of the invention includes the following steps: To place the PC lenses into the cavity of the soft veil-shaped mold,
5 and inject silica gel (high-rigid joint molding material), which is the raw material of the soft veil. The injection temperature shall be 250°C or below, and the gel injection pressure shall be 50T/cm². Through the continuous process flow of injecting, heating, pressing and opening, the product is firmly established and not easy to twist.